U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT **Assistant Secretary for Housing-Federal Housing Commissioner**	**Series and Series Number:** (Supersedes issue dated August 24, 1995) **MATERIALS RELEASE NO.** 1131d
TO: DIRECTORS, HOUSING DIVISION **DIRECTORS, MULTIFAMILY DIVISION** **DIRECTORS, SINGLE FAMILY DIVISION**	**ISSUE DATE:** September 14, 1998
	REVIEW DATE: September 14, 2001

SUBJECT: 1. Product Energy-Brace Laminated Kraft Paperboard

2. Name and Address of Manufacturer

Fiber-Lam, Inc.
P.O. Box 2002
Doswell, VA 23047

Data on the nonstandard product, described herein have been reviewed by the Department of Housing and Urban Development (HUD) and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

This Materials Release cannot be used as an indication of endorsement, or approval by HUD of the described product, and any statement or representation, however made, indicating such approval or endorsement by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: Wall sheathing and nonstructural roof underlayment for concrete and clay roofing tiles.

DESCRIPTION:

Energy-Brace laminated kraft paperboard covered with aluminum foil or polyethylene on both surfaces or aluminum foil on one side and polyethylene on the other side. When used as a roof underlayment, the polyethylene covered surface shall be installed with the polyethylene surface toward the outside or up and the aluminum foil side is installed toward the inside or down.

REQUIREMENTS:

The laminated kraft paperboard shall be in compliance with Table 1.

Table 1 - REQUIREMENTS FOR LAMINATED KRAFT PAPERBOARD

Physical Properties	Values			Test Method
	Nonstructural (Standard-Brace) Green	Structural (Structural-Brace) Red	(Super-Brace) Blue	
Thickness, in.	0.071±0.005	0.105±0.005	0.121±0.007	ASTM C 209
Mullen Burst, psi min.	300.0	550.0	650.0	ASTM D 2529
Vapor Tran., perms, max.	0.1	0.1	0.1	ASTM E 96
Water Absorp., % max.	15.0	15.0	15.0	ASTM C 209
Moist.Cont., %, min-max.	5-13	5-13	5-13	ASTM C 209
Linear Expand.,% max.	0.5	0.5	0.5	ASTM D 1037
Mod.of Rupture, psi min.				ASTM C 209
MD*	4000.0	4000.0	4000.0	
CD**	2000.0	2000.0	2000.0	
Ten.Strength parallel to sur. psi., min.				ASTM C 209
MD	4000.0	4000.0	4000.0	
CD	2000.0	2000.0	1600.0	
Ten.Strength per. to surface, psi., min.	1200.0	1200.0	1200.0	ASTM C 209

*MD=Machine Direction **CD=Cross Machine Direction

Table 2 - STUD AND FASTENER REQUIREMENTS

Type	Thickness	Allowable[1] Shear Resistance	Stud Spacing	Minimum [2] Fastener	Fastener Spacing
Standard Brace	Thickness .066 min.	Corner Bracing Required to meet MPS	16" o.c.	16 ga 7/16" crown by 1-1/4" leg staples or 11 ga 1-1/4" roofing nails	6" o.c. at edges & 12" o.c. at intermediate supports
Structural Brace	.100 min.	200 plf [3,4]	16" o.c.	16 ga 7/16" crown by 1-1/4" leg staples	3" o.c. edge 6" o.c. intermediate supports
		200 plf [3,4]	16" o.c.	11 ga 1-1/4" roofing nails or 16 ga 1" crown staples 1-1/4" staple legs	3" o.c. edge 6" o.c. intermediate supports
Super Brace	.114 min.	130 plf [3,4]	24" o.c.	16 ga 7/16" crown by 1-1/4" staple legs	3" o.c. edge & 3" o.c. intermediate supports
		165 plf [3,4]		11 ga 1-1/4" roofing nails or 16 ga 1" crown staples with 1-1/4" staple legs	3" o.c. edge & 3" o.c. intermediate supports

1. Shear resistance allowance is applicable only when horizontal shear forces caused by wind and earthquake are calculated. The panels shall extend the full wall height and continuously span at least three studs.

2. All fasteners are to be galvanized.

3. Joints may be butted or lapped 3/4" min. with a single row of fasteners.

4. These values are based on a 2.5 safety factor on the average ultimate load in areas where BOCA Code is applicable. In areas where the ICBO & SBCC codes are applicable, a safety factor of 3.0 is required.

INSTALLATION:

Installation of Energy-Brace panels shall conform to manufacturer's printed instructions and the following:

1. Wall panels shall have the long dimension vertical. All joints shall occur over studs, plates, or solid blocking. Joints shall be butted or shall be lapped a minimum of ¾". Nails and staples shall be driven flush, but shall not cut the panel surface. Staple crowns shall be parallel to the long dimension of the supporting member.

2. Panels shall not be used as a nail base. Siding shall be fastened to studs, or to furring strips and studs.

3. Panels used in floors and ceilings shall be used as non-structural elements.

4. Panels may be used as nonstructural underlayment for concrete or clay roof tiles or wood shake roofs on spaced roof sheathing. A 2" horizontal lap and a 1 1/2" vertical lap shall be provided. Panels under concrete tiles shall have a polyethylene film side facing the tiles.

5. Panels extending the full height of the wall, spanning at least three continuous studs, mounted to meet the stud spacing and fastening requirements shown in Table 2 may be allowed the shear resistance in pounds/ linear foot of wall (plf) shown in Table 2.

CERTIFICATION:

Fiber-Lam, Inc. certifies that Energy-Brace laminated paper-board wall sheathing produced in conformance to this Materials Release (MR), is in compliance with a validation program at RADCO, Inc. in accordance with the Code of Federal Regulations, 24 CFR 200.935. RADCO shall inspect the manufacturer's facility every year at the plant to assure that the initially accepted quality control procedures are being followed. Sufficient samples of this product shall be selected and tested each year to validate the manufacturer's conformance to the requirements of this MR. Each piece of sheathing certified as conforming to this MR shall be labeled with the following information:

1. The RADCO validation mark
2. The manufacturer's name
3. The manufacturer's conformance to this MR
4. Span rating
5. Identification to distinguish grades by print color and the thickness:

min. 0.066" Standard-Brace will be printed in green

min. 0.100" Structural Brace will be printed in red

min. 0.114" Super-Brace will be printed in blue

WARRANTY:

Fiber-Lam, Inc. warrants Energy-Brace panels against any defect due to faulty material and workmanship in the manufacturing process for a period of four (4) years from the date of installation.

The liability of Fiber-Lam, Inc. on this warranty shall be limited to replacement of any defective panel and the cost of installation; or at the option of Fiber-Lam, Inc. payment in lieu thereof.

The warranty applies to any material failure due to manufacture only and does not cover nor will the manufacturer be liable for any defect or damage due to misuse, improper installation, or damages resulting from fire, lightning or other unforeseen cause beyond the manufacturer's control. There are no warranties which extend beyond the description of Energy-Brace contained in this document. In no event shall Fiber-Lam, Inc. be liable for any incidental, consequential or proximate damage.

The manufacturer's warranty does not relieve the builder, in any way, of responsibility under the terms of the Builder's Warranty required by the National Housing Act or under any provisions applicable to any other housing program. A copy of the manufacturer's warranty shall be furnished by the builder to the owner.

MANUFACTURER'S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

1. Produce, label and certify the material, product or system in strict accordance with the terms of this MR.

2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.

3. When requested, provide the Manufactured Housing and Standards Division, Office of Consumer and Regulatory Affairs, HUD Headquarters, with a representative list of properties, in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

4. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for a renewal or revision 90 days prior to the Review Date printed on this MR. Submittals for renewal or revision shall be sent to HUD Headquarters. Appropriate User Fee shall be sent to:

U.S. Department of Housing and Urban Development
Technical Suitability of Products Fees
P.O. Box 954199
St. Louis, MO 63195-4199

The holder of this MR may apply for revision at any time prior to the Review Date. Minor revisions may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of this MR. HUD will notify the manufacturer that the MR may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,

2. the manufacturer has changed its organizational form without notifying HUD, or

3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

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This Materials Release is issued solely for the captioned firm, and is not transferable to any person or successor entity.
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